Seeds of change
or a package of discontent?

by ERIC WATKINSON

The economic and environmental costs of introducing genetically modified organisms into South Africa are likely to be high.

South Africa used to have a significant public stake in seed research, development and ownership. The agricultural research base created within the state and publicly funded universities dates back to 1910, when it was agreed that public agricultural intervention should be undertaken by central government. By 1992, and as a result of extensive deregulation and privatisation efforts, the former Department of Agricultural Development was reformed into a relatively autonomous parastatal called the Agricultural Research Council (ARC).

Prior to 1993, most new grain varieties developed by the state were channelled *via* the control boards to white-owned companies and co-operatives, who then marketed and distributed seed to farmers and also supplied a package of chemical inputs. After 1993 and the recognition of seed breeders' rights in law, new varieties were released on tender from the ARC to recognised seed companies. Two seed companies, Sensako and Pannar, became especially prominent.

Sensako grew from strength to strength and managed to secure the lion's share of the South African grain seed market. In the space of a few years, state control and ownership of seed research and development gave way to private control. In December 2000, the American owned chemical/biotechnology giant, Monsanto, bought the whole of Sensako, leaving domestic control of the seed industry in tatters.

Opposition

The Food and Allied Workers Union (Fawu) has made several calls for a five-year moratorium on the release of genetically modified organisms (GMOs) onto South African farms and into South African stomachs. The union's position is clear: there should be no general release of GMOs until there are reliable assessments of the socio-economic, environmental and health risks associated with genetically engineered seeds and products. In addition, consumers should be made aware of the GMO content of the food they buy through clear labelling of all products.

In contrast, biotechnology lobbyists under the umbrella of AfricaBio argue that the South

GMO crops approved for research and/or human and animal consumption

Crop	Transferred genetic trait	Status
Canola	Herbicide resistance	Field trials
Maize	Herbicide resistance	Field trials
Maize	Insect and herbicide resistance	Field trials and use as animal feed
Maize	Insect resistance	Field trials and commercial planting
White maize	Unspecified	Commodity import
Potato	Insect resistance	Field trials and contained use
Soya beans	Herbicide resistance	Field trial and use as animal feed
Sugarcane	Insect and herbicide resistance	Greenhouse trials
Sweet potato	Insect resistance	Contained use
Tomato	Virus resistance	Research at registered facility
Wheat	Herbicide resistance	Field trials and contained use

Source: Registrar of GMOs, National Department of Agriculture, GMO Permit Schedules December 1999-June 2002

African government operates one of the most restrictive GMO release systems in the world. They say that, as a result, South Africa runs the risk of lagging behind most of the world, which is already riding the tidal wave of biotechnological invention. According to AfricaBio, it is only a matter of time before Europe (with a significant green constituency) becomes swamped by the US position on genetic engineering.

The record

In this game of catch-up, or should we say ketchup, South Africa does not seem to be faring as badly as AfricaBio would have us believe. If you analyse South Africa's GMO release record, it emerges that there have been 192 approved food GMO applications since December 1999. These figures exclude a large number of applications and approvals that took place before 1999 (the GMO Act of 1997 only came into operation two years after being passed). Monsanto and its newfound strategic partner, Pioneer High-Bred, account for 60% of approved applications. A grain importer accounts for another 11% and 22 companies account for the remaining 29% (including some of the big names like Aventis, Novartis and Syngenta). The table on the previous page shows the recent status of different GMO crop and food releases.

The table shows that the Executive Council established by the GMO Act has approved of the insertion of insect and herbicide resistance into both yellow and white maize for planting by South African commercial farmers. In addition, significant imports of GMO white maize for human consumption were booked with American suppliers in December 2001 and approved by the Registrar during 2002. It is still not clear whether these import bookings will

Is this an appropriate model for South Africa?

eventually be supplied into the country. Import agents remain wary of importing white maize that will be more expensive than existing high-priced domestic supplies when converted into Rands.

South Africa's liberal GMO release system is more understandable when one appreciates why our large-scale commercial farmers are in such a hurry to adopt GMOs in the first place:

- The current mode of development of agriculture in OECD countries reinforces the affluence and political power of the protectionist and export-oriented farm and food lobby, despite their considerable inefficiencies (ie farmer subsidies mostly leak into increased prices for chemical inputs, land and deadweight efficiency losses).
- The model of agriculture used in many OECD countries has powerful tendencies towards greater concentration of ownership, increased use of highly capital-intensive technology and negative environmental consequences. A combination of massive subsidies, concentrated ownership and the application of short-term cost reducing biotechnologies will increase the competitive pressure felt by South African farmers. This, in turn, encourages large-scale South African producers to rapidly adopt a similar 'model of agriculture'. Since there is no state subsidy, the necessary additional income is drawn directly from consumers.
- As if high food prices are not bad enough for poverty, increased competitive pressure and the adoption of biotechnology could also result in substantial displacements of farm labour (ie those currently weeding and applying hazardous pesticides and herbicides). Although most developing country governments express an interest in raising the productivity of agriculture by adopting new technology, most also get very worried about the associated displacement of people from rural to urban areas.

'Increased competitive pressure and the adoption of biotechnology could result in substantial displacements of farm labour.'

It is time, perhaps, that South Africans question whether the image of a smiling US family farmer 'feeding the world' is an appropriate agricultural model for us to catch up to. While it may appear to be advanced, we need to pay attention to the total price tag.

[Eric Watkinson is a researcher in the Sector Job Summit Project at NALEDI. NALEDI has submitted a formal request to the registrar of GMOs for access to examples of risk and environmental impact assessment reports relating to GMO maize. The request has been made in terms of the Promotion of Access to Information Act]